INDEX

DOKLADY BIOPHYSICS

Volumes 232-237, 1977

DOKLADY BIOPHYSICS

A translation of the Biophysics Section of *Doklady Akademii Nauk SSSR*

Volumes 232-234 January-June, 1977

CONTENTS

	Engl./Russ.	
VOLUME 232, JANUARY-FEBRUARY, 1977		
Electron Spin Resonance of Phosphorylating Mitochondria – O. N. Brazhevskaya, O. S. Nedelina, É. M. Shcksheev, and L. P. Kayushin	3	221
Effect of Oxygen on Intermediate Stages of Chlorophyll Synthesis in Etiolated Leaves – L. M. Vorob'eva and A. A. Krasnovskii	6	225
Low-Temperature Reduction of Peroxidase – S. N. Magonov, A. M. Arutyunyan, L. A. Blyumenfel'd, R. M. Davydov, and Yu. A. Sharonov	9	695
Mass-Spectrometric Investigation of Trimers of Nitrogenous Bases of Nucleic Acids – I. K. Yanson and L. F. Sukhodub	12	699
Possible Self-Regulation of Shape of Evoked Response in Man – V. V. Petukhov, L. A. Popov, and O. V. Godukhin	16	942
Transport of Monovalent Thallium Ions across Mitochondrial Membranes – I. A. Skul'skii	18	945
Effect of Insulin on Membrane Electrical Properties and Transcribing Activity of Cell Chromatin of Rats of Different Ages – V. V. Frol'kis, O. A. Martynenko, I. Yu. Khilobok, and N. B. Gol'dshtein	22	1201
Critical Effects in the First Transplants of Spontaneous Mammary Gland Tumors in Strain A Mice – L. M. Dronova, E. I. Belich, and V. N. Erokhin	25	1427
VOLUME 233, MARCH-APRIL, 1977		
Free Radicals during Growth of a Transplanted Melanoma – G. N. Bogdanov, V. N. Varfolomeev, I. V. Pavlovskii, L. S. Vasil'eva, A. N. Goloshchapov, and N. M. Émanuél	31	494
Fluctuations in Voltage Potential of Bilayer Phospholipid Membranes Modified by Valinomycin – S. M. Bezrukov, I. Ya. Vodyanoi, G. M. Drabkin, and N. I. Preobrazhenskii	34	704
Identification of Compound Inducing Potassium Ion Transport in Mitochondria and Bilayer Lipid Membranes – Yu. V. Evtodienko, B. I. Medvedev, L. Yu. Kudzina, V. S. Kobelev, and L. S. Yagushinskii	37	708
Effect of Structure of Three-Layer Spherical Particles on Light Absorption and Scattering – I. A. Terskov, V. N. Lopatin, and F. Ya. Sid'ko	40	712
Nature of the 4.5-Å Maximum on Curves of X-Ray Diffuse Scattering of Proteins and Structured Polypeptides – G. A. Fedorov and O. B. Ptitsyn	44	716
Connection of "Portal Currents" with Intramembrane Charge Displacement – S. Kh. Ait'yan, S. S. Dukhin, V. F. Pastushenko, and Yu. A. Chizmadzhev	47	1215
VOLUME 234, MAY-JUNE, 1977		
New Approach to the Study of Transmembrane Asymmetry of Phospholipids by NMR Spectroscopy with Displacing Reagents – A. V. Viktorov, I. A. Vasilenko, L. I. Barsukov, R. P. Evstigneeva, and L. D. Bergel'son	53	207
Electrochemical Behavior of Adsorption Films of Chlorophyll – L. A. Khanova and M. R. Tarasevich	56	211
Change in Paramagnetic Properties of Mouse Liver Tissue after Treatment with Benzene Vapors – A. I. Sergeev, V. I. Naidich, and T. V. Bunto	59	472

CONTENTS

(continued)

	Engl.	Russ.
Electron Microscopic Investigation of Three-Dimensional Structure of Tail of Bacteriophage phi-5 – B. K. Vainshtein, A. M. Mikhailov, I. A. Andriashvili, A. S. Kaftanova, and G. V. Petrovskii	61	699
Change in Paramagnetic Properties of Liver Induced by Ionol during Benzene Poisoning – T. S. Shulyakovskaya, V. A. Rykova, A. N. Saprin, and M. F. Rozhkov	64	703
Spin-Probe Investigation of Structural Changes in Erythrocyte Membranes Due to cAMP – I. D. Volotovskii, V. S. Finin, A. V. Kulikov, and S. V. Konev	67	943
Effect of Phenylalkylamines on Potential Dependence of Frog Muscle-Fiber End-Plate Current – V. A. Snetkov	70	947
Evidence of Existence of Two Independent Components of the Potassium Current in the Node-of-Ranvier Membrane of the Frog Rana ridibunda – V. I. Il'in, I. E. Katina, A. V. Lonskii, V. S. Makovskii, and E. V. Polishchuk	73	1467

The Russian press dates (podpisano k pechati) of the first and last issues covered in this issue of the translation were, respectively, 12/21/1976 and 6/2/1977. Publication of the material translated in this issue therefore is known to have occurred not prior to the earlier of these dates, but must be assumed to have taken place at intervals starting reasonably soon after this date and ending shortly after the later date.

DOKLADY BIOPHYSICS

Volumes 232-237, 1977

(A translation of the Biophysics section of Doklady Akademii Nauk SSSR)

A

Andriashvili, I. A. - 61
Ait'yan, S. Kh. - 47
Artsatbanov, V. Yu. - 132
Arutyunyan, A. M. - 9

B

Babkina, L. N. - 147
Barsukov, L. I. - 53
Basov, N. G. - 104
Belich, E. I. - 25
Berdinskikh, N. K. - 109
Berezin, I. V. - 106
Bergel'son, L. D. - 53
Bezrukov, S. M. - 34
Blyumenfel'd, L. A. - 9, 81, 90
Bogdanov, G. N. - 115
Boiko, V. A. - 104
Boyarintseva, A. K. - 136
Brazhevskaya, O. N. - 3
Bunto, T. V. - 59, 87

C

Chizmadzhev, Yu. A. - 47
Chugunov, A. Yu. - 104

D

Danilychev, V. A. - 104
Davydov, R. M. - 9, 81, 90
Drabkin, G. M. - 34
Dronova, L. M. - 25, 115
Drozdova, N. N. - 94
Dukhin, S. S. - 47

E

Éidus, L. Kh. - 79
Émanuél, N. M. - 31, 87, 115
Erokhin, V. N. - 25
Evstigneeva, R. P. - 53
Evtodienko, Yu. V. - 37

F

Fedorov, G. A. - 44
Feigin, L. A. - 136
Fel', N. S. - 81, 90
Finin, V. S. - 67
Fish, A. M. - 123
Frol'kis, V. V. - 22

G

Gitel'zon, I. I. - 123
Godukhin, O. V. - 16
Gol'danskii, V. I. - 156
Gol'dfel'd, M. G. - 153
Gol'dshtein, N. B. - 22
Goloshchapov, A. N. - 31
Gulyaeva, N. D. - 92

I

Il'in, V. I. - 73

K

Kaftanova, A. S. - 61
Kalamkarov, G. R. - 156
Karapetyan, N. V. - 129
Katina, I. E. - 73
Kayushin, L. P. - 3
Khalilov, R. I. - 153
Khangulov, S. V. - 153
Khanova, L. A. - 56
Khilobok, I. Yu. - 22
Khokhlov, I. V. - 112
Kholin, I. V. - 104
Khristianovich, D. S. - 115
Kleimenov, A. N. - 83
Klevanik, A. V. - 101
Klimov, V. V. - 101
Kobelev, V. S. - 37
Konev, S. V. - 67
Konstantinov, A. A. - 132, 139
Korystov, Yu. N. - 79
Kozlovich, L. I. - 79
Krasnovskii, A. A. - 6, 94, 101, 119, 129
Kratasyuk, G. A. - 123
Kratasyuk, V. A. - 123
Kublik, L. N. - 79
Kubrina, L. N. - 150
Kudzina, L. Yu. - 37
Kulikov, A. V. - 67
Kuprin, S. P. - 81, 90
Kuznetsov, B. A. - 94

L

Livshits, V. I. - 109
Lonskii, A. V. - 73
Lopatin, V. N. - 40

M

Magonov, S. N. - 9
Makovskii, V. S. - 73
Martynenko, O. A. - 22
Medvedev, B. I. - 37
Mel'nikova, N. N. - 109
Mestechkina, N. M. - 94
Mikhailov, A. I. - 156
Mikhailov, A. M. - 61
Molchanov, A. P. - 147
Mostovnikov, V. A. - 112
Murza, L. I. - 87, 150

N

Naidich, V. I. - 59, 87, 150
Nalbandyan, R. M. - 90
Nedelina, O. S. - 3

O

Obukhova, L. K. - 87, 143
Omel'yanenko, V. G. - 156
Ostrovskii, M. A. - 156

P

Pastushenko, V. F. - 47
Pavlovskii, I. V. - 31
Petrovskii, G. V. - 61
Petukhov, V. V. - 16
Piruzyan, L. A. - 83
Podoplelov, A. V. - 123
Polishuk, E. V. - 73
Popov, L. A. - 16
Postnikova, G. B. - 81
Preobrazhenskii, N. I. - 34

Ptitsyn, O. B. - 44
Pushkina, E. M. - 94

R

Rakhimberdieva, M. G. - 129
Rogozhin, S. V. - 92
Rol'bin, Yu. A. - 136
Rozenfel'd, M. A. - 83
Rozhkov, M. F. - 64
Rubinov, A. N. - 112
Rykova, V. A. - 64

S

Sadovnikova, I. P. - 143
Saprin, A. N. - 64
Sergeev, A. I. - 59, 150
Sharonov, Yu. A. - 9
Sheksheev, É. M. - 3
Shulyakovskaya, T. S. - 64
Shumakovich, G. P. - 94
Shuvalov, V. A. - 101
Sid'ko, F. Ya. - 40
Skulachev, V. P. - 132
Skul'skii, I. A. - 18
Snetkov, V. A. - 70
Stepanov, B. I. - 112
Sukhodub, L. F. - 12

T

Tarasevich, M. R. - 56
Terskov, I. A. - 40

V

Vainshtein, B. K. - 61
Vanin, A. F. - 150
Varfolomeev, V. N. - 31, 106, 115
Vasilenko, I. A. - 53
Vasil'eva, L. S. - 31
Veksler, A. M. - 79
Viktorov, A. V. - 53
Vodyanoi, I. Ya. - 34
Volotovskii, I. D. - 67
Vorob'eva, L. M. - 6, 119

Y

Yaguzhinskii, L. S. - 37
Yanson, I. K. - 12

Z

Zaslavskii, B. Yu. - 92
Zvorykin, V. D. - 104

DOKLADY BIOPHYSICS

Volumes 232-237, 1977

(A translation of the Biophysics section of Doklady Akademii Nauk SSSR)

VOLUME 232, JANUARY-FEBRUARY, 1977

	Engl.	Russ.
Electron Spin Resonance of Phosphorylating Mitochondria – O. N. Brazhevskaya, O. S. Nedelina, É. M. Sheksheev, and L. P. Kavushin	3	221
Effect of Oxygen on Intermediate Stages of Chlorophyll Synthesis in Etiolated Leaves – L. M. Vorob'eva and A. A. Krasnovskii	6	225
Low-Temperature Reduction of Peroxidase – S. N. Magonov, A. M. Arutyunyan, L. A. Blyumenfel'd, R. M. Davydov, and Yu. A. Sharonov	9	695
Mass-Spectrometric Investigation of Trimers of Nitrogenous Bases of Nucleic Acids – I. K. Yanson and L. F. Sukhodub	12	699
Possible Self-Regulation of Shape of Evoked Response in Man – V. V. Petukhov, L. A. Popov, and O. V. Godukhin	16	942
Transport of Monovalent Thallium Ions across Mitochondrial Membranes – I. A. Skul'skii	18	945
Effect of Insulin on Membrane Electrical Properties and Transcribing Activity of Cell Chromatin of Rats of Different Ages – V. V. Frol'kis, O. A. Martynenko, I. Yu. Khilobok, and N. B. Gol'dshtein	22	1201
Critical Effects in the First Transplants of Spontaneous Mammary Gland Tumors in Strain A Mice – L. M. Dronova, E. I. Belich, and V. N. Erokhin	25	1427

VOLUME 233, MARCH-APRIL, 1977

Free Radicals during Growth of a Transplanted Melanoma – G. N. Bogdanov, V. N. Varfolomeev, I. V. Pavlovskii, L. S. Vasil'eva, A. N. Goloshchapov, and N. M. Émanuél'	31	494
Fluctuations in Voltage Potential of Bilayer Phospholipid Membranes Modified by Valinomycin – S. M. Bezrukov, I. Ya. Vodyanoi, G. M. Drabkin, and N. I. Preobrazhenskii	34	704
Identification of Compound Inducing Potassium Ion Transport in Mitochondria and Bilayer Lipid Membranes – Yu. V. Evtodienko, B. I. Medvedev, L. Yu. Kudzina, V. S. Kobelev, and L. S. Yagushinskii	37	708
Effect of Structure of Three-Layer Spherical Particles on Light Absorption and Scattering – I. A. Terskov, V. N. Lopatin, and F. Ya. Sid'ko	40	712
Nature of the 4.5-Å Maximum on Curves of X-Ray Diffuse Scattering of Proteins and Structured Polypeptides – G. A. Fedorov and O. B. Ptitsyn	44	716
Connection of "Portal Currents" with Intramembrane Charge Displacement – S. Kh. Ait'yan, S. S. Dukhin, V. F. Pastushenko, and Yu. A. Chizmadzhev	47	1215

VOLUME 234, MAY-JUNE, 1977

New Approach to the Study of Transmembrane Asymmetry of Phospholipids by NMR Spectroscopy with Displacing Reagents – A. V. Viktorov, I. A. Vasilenko, L. I. Barsukov, R. P. Evstigneeva, and L. D. Bergel'son	53	207
Electrochemical Behavior of Adsorption Films of Chlorophyll – L. A. Khanova and M. R. Tarasevich	56	211
Change in Paramagnetic Properties of Mouse Liver Tissue after Treatment with Benzene Vapors – A. I. Sergeev, V. I. Naidich, and T. V. Bunto	59	472

Electron Microscopic Investigation of Three-Dimensional Structure of Tail of Bacteriophage phi-5 – B. K. Vainshtein, A. M. Mikhailov, I. A. Andriashvili, A. S. Kaftanova, and G. V. Petrovskii 61 699
Change in Paramagnetic Properties of Liver Induced by Ionol during Benzene Poisoning – T. S. Shulyakovskaya, V. A. Rykova, A. N. Saprin, and M. F. Rozhkov. . . 64 703
Spin-Probe Investigation of Structural Changes in Erythrocyte Membranes Due to cAMP – I. D. Volotovskii, V. S. Finin, A. V. Kulikov, and S. V. Konev 67 943
Effect of Phenylalkylamines on Potential Dependence of Frog Muscle-Fiber End-Plate Current – V. A. Snetkov 70 947
Evidence of Existence of Two Independent Components of the Potassium Current in the Node-of-Ranvier Membrane of the Frog Rana ridibunda – V. I. Il'in, I. E. Katina, A. V. Lonskii, V. S. Makovskii, and E. V. Polishchuk. 73 1467

VOLUME 235, JULY-AUGUST, 1977

Seasonal Changes in Survival of Irradiated Mammalian Cells in Culture – L. Kh. Éidus, L. N. Kublik, A. M. Veksler, L. I. Kozlovich, and Yu. N. Korystov .. 79 690
Investigation of Reactivity of Conformationally-Nonequilibrium States of Metalloproteins (Myoglobin) by Pulse Radiolysis – R. M. Davydov, S. P. Kuprin, N. S. Fel', G. B. Postnikova, and L. A. Blyumenfel'd 81 950
Thermodynamic Aspects of Primary Polymerization of Fibrin Monomer. Mechanism of Inhibiting Effect of Urea – M. A. Rozenfel'd, A. N. Kleimenov, and L. A. Piruzyan 83 953
Retardation of Aging by Stimulation of Microsomal Oxidase System by Phenobarbital – N. M. Émanuél', L. K. Obukhova, V. I. Naidich, L. I. Murza, and T. V. Bunto 87 957
Investigation of the Reactivity of Conformationally-Nonequilibrium States of Metalloproteins (Cytochrome c) by Pulse Radiolysis – S. P. Kuprin, R. M. Davydov, N. S. Fel', R. M. Nalbandyan, and L. A. Blyumenfel'd 90 1193
Contribution of Cell Wall Components to Infrared Spectra of Microorganisms – B. Yu. Zaslavskii, N. D. Gulyaeva, and S. V. Rogozhin 92 1196
Electrochemical Oxidation and Reduction of Bacteriochlorophyll b and Its Pheophytin – N. N. Drozdova, B. A. Kuznetsov, N. M. Mestechkina, G. P. Shumakovich, E. M. Pushkina, and A. A. Krasnovskii 94 1137

VOLUME 236, SEPTEMBER-OCTOBER, 1977

Reduction of Pheophytin in the Photoreaction of Photosystem II of Higher Plants – A. V. Klevanik, V. V. Klimov, V. A. Shuvalov, and A. A. Krasnovskii 101 241
X-Ray Photography of Biological Objects by Soft X-Ray Emission of Plasma Mirror of an Electroionization CO_2 Laser – N. G. Basov, V. A. Boiko, V. A. Danilychev, V. D. Zvorykin, I. V. Kholin, and A. Yu. Chugunov 104 464
Kinetic Models of Electron Transport in Biological Systems – S. D. Varfolomeev and I. V. Berezin 106 748
Electrophoretic Investigation of Proteins of Liver Endoplasmic Reticulum Membranes and Ribosomes from Rats during Induction of Cancer by Diethylnitrosamine – N. K. Berdinskikh, N. N. Mel'nikova, and V. I. Livshits 109 1004
Regulation of Functional Activity of Human Cells by Laser Emission – B. I. Stepanov, V. A. Mostovnikov, A. N. Rubinov, and I. V. Khokhlov 112 1007
Free-Radical Content of Liver as an Index of Development of Experimental Leukemias – D. S. Khristianovich, L. M. Dronova, V. N. Varfolomeev, G. N. Bogdanov, and N. M. Émanuél' 115 1011
Reversible Changes in State of Pigment Due to Illumination of Leaves – L. M. Vorob'eva and A. A. Krasnovskii 119 1243
Possible Role of Singlet Oxygen in Excitation of Bacterial Luminescence – G. A. Kratasyuk, A. V. Podoplelov, V. A. Kratasyuk, A. M. Fish, and I. I. Gitel'zon 123 1247

VOLUME 237, NOVEMBER-DECEMBER, 1977

Low-Temperature Induction of Fluorescence of Greening Bean Leaves – M. G. Rakhimberdieva, N. V. Karapetyan, and A. A. Krasnovskii	129	224
Investigations of Location of Cytochrome Oxidase in Coupling Membrane: Interaction of Cytochrome *a* with H^+ Ions of Mitochondrial Matrix – V. Yu. Artsatbanov, A. A. Konstantinov, and V. P. Skulachev	132	461
Precise Determination of Shape of Bacteriophage S_D from Results of Small-Angle X-Ray Scattering – A. K. Boyarintseva, Yu. A. Rol'bin, and L. A. Feigin	136	709
Role of Protons in the Mechanism of Operation of Coupling Point III of the Respiratory Chain of Mitochondria: Cytochrome Oxidase as an Electron–Proton Generator of Membrane Potential – A. A. Konstantinov	139	713
Variation of Hematological Indices during Development of Transplanted Leukemias and Tumors – I. P. Sadovnikova and L. K. Obukhova	143	717
Possible Existence of an Auditory Feedback Mechanism on the Auditory Periphery – A. P. Molchanov and L. N. Babkina	147	958
Effect of Iron Content on Proton Magnetic Relaxation of Tissues – L. I. Murza, A. I. Sergeev, A. F. Vanin, L. N. Kubrina, and V. I. Naidich	150	1216
Photoinduced Paramagnetic Centers in Photosystem II of Chloroplasts – M. G. Gol'dfel'd, R. I. Khalilov, and S. V. Khangulov	153	1494
Investigation of Dynamic Characteristics of Photoreceptor Membrane by the Recombination-Kinetics Method – V. G. Omel'yanenko, A. I. Mikhailov, G. R. Kalamkarov, M. A. Ostrovskii, and V. I. Gol'danskii	156	1498

INDEX

Author Index, Volumes 232-237, 1977	163
Tables of Contents, Volumes 232-237, 1977	165